

REMARKS

This is in full and timely response to the non-final Official Action of September 30, 2008. Reexamination in view of the above amendment, applicant believes the pending application is in condition for allowance. No new matter has been added. Claims 1-30 are currently pending in this application, claims 8, 9, 15 and 30-35 being independent.

I. Interview in Person

Applicant gratefully wishes to thank the Examiner for extending the courtesy of granting and conducting on January 16, 2009, a personal interview to discuss the rejection made within the non-final Office Action of September 30, 2008.

II. Priority Documents

It is noted with appreciation that the Office Action has acknowledged the claim for priority and receipt of the certified copies of the priority documents in the National Stage application from the International Bureau (PCT Rule 17.2(a)).

III. Information Disclosure Statement

Applicant thanks the Examiner for providing an initialed copy of form PTO/SB/08a/b, which was submitted by the Applicant on August 2, 2005.

IV. Claim Rejection – 35 USC §102

Claim 19 is rejected under 35 U.S.C. §102 as being anticipated by Takeda (6,442,948). The rejection is respectfully traversed.

By the foregoing amendment, claim 19 has been canceled. The rejection is now moot. Therefore, withdrawal of the rejection is respectfully requested.

V. Claim Rejection – 35 USC §103

1. Claims 1, 2, 4, 5, 7, 8, 10, 11, 15-18 and 23-27

Claims 1, 2, 4, 5, 7, 8, 10, 11, 15-18 and 23-27 are rejected under 35 U.S.C. §103(a) as being unpatentable over Takeda (6,442,948) in view of Hauser (3,415,069).

(i) Claim 1

Claim 1 is directed to a circulation type liquid helium recondensation device with a contaminant-purging function comprising: a pump which pumps helium gas evaporating from a liquid helium storage tank a refiner connected to the liquid helium storage tank through a first passage, which refines the pumped helium gas; a condensing pot connected to the refiner through a second passage, which liquefies the gas; and a third passage through which the liquefied helium is returned to the liquid helium storage tank; and a discharge circuit connected to the first passage between the refiner and the liquid helium storage tank, wherein the pump is connected to the discharge circuit through a normally closed valve, wherein a heater is provided in the refiner, and wherein in a contaminant discharge operation, the normally closed valve is opened and contaminants that vaporize by heating the refiner by the heater are pumped by the pump and discharged to the atmosphere via said discharge circuit.

Takeda arguably teaches a liquid helium recondensation device and transfer line used therefore. Hauser arguably teaches a high pressure helium purifier. However, the applied art fails to disclose, teach or suggest that “a discharge circuit connected to the first passage between the refiner and the liquid helium storage tank, wherein the pump is connected to the discharge circuit through a normally closed valve” and “in a contaminant discharge operation, the normally closed valve is opened and contaminants that vaporize by heating the refiner by the heater are pumped by the pump and discharged to the atmosphere via said discharge circuit.”

Thus, Applicant believes that claim 1 is patentable over the applied art. Therefore, withdrawal of the rejection is respectfully requested.

(ii) Claim 8

Claim 8 is directed to a contaminant-purging method for the circulation type liquid helium recondensation device that is employed in liquid helium recondensation procedure comprising steps of pumping helium gas evaporating from a liquid helium storage tank using a circulating pump, refining the pumped helium gas in a refiner, liquefying the gas in a cooler, and returning the liquefied helium to the liquid helium storage tank for recycling, in which said refiner is heated to vaporize contaminants deposited on the refiner, and discharging the vaporized contaminants from an inflow side of the refiner to the atmosphere.

Similarly to the argument with respect to claim 1, however, the applied art fails to disclose, teach or suggest that “discharging the vaporized contaminants from an inflow side of the refiner to the atmosphere.”

Therefore, claim 8 is patentable over the applied art. Therefore, withdrawal of the rejection is respectfully requested.

(iii) Claim 15

Claim 15 is directed to a refiner for a circulation type liquid helium recondensation device with a contaminant-purging function designed to pump helium gas evaporating from a liquid helium storage tank using a circulating pump, refine the pumped helium gas in the refiner, liquefy the gas in a condensing pot, and return the liquefied helium to the liquid helium storage tank for recycling, in which said refiner is made up of a thermally conductive housing, with contaminant solidification unit installed on the housing, an infeed means to transfer helium gas to said housing, and a heating means to vaporize the contaminants attached to said solidification unit, and in which the refiner and the condensing pot are provided in a single cool box, and the contaminants vaporized in the refiner by said heating means are discharged from an inflow side of the refiner to the atmosphere via said infeed means.

Takeda arguably teaches a liquid helium recondensation device and transfer line used therefore. Hauser arguably teaches a high pressure helium purifier.

However, the applied art fails to disclose, teach or suggest that “the contaminants vaporized in the refiner by said heating means are discharged from an inflow side of the refiner to the atmosphere via said infeed means.”

Similarly to the arguments with respect to claims 1 and 8, claim 15 is patentable over the applied art. Therefore, withdrawal of the rejection is respectfully requested.

(iv) Claims 2, 4, 5, 7, 10, 11, 16-18 and 23-27

Since claims 2, 4, 5, 7, 10, 11, 16-18 and 23-27 depend on the respective base claims 1, 8, 9 and 15, they are allowable for at least the reasons that the respective base claims are allowable and they are further allowable by reason of the additional limitations set forth therein. Therefore, withdrawal of the rejection is respectfully requested.

2. Claims 3, 6, 9, 12-14, 21, 22, 28 and 29

Claims 3, 6, 9, 12-14, 21, 22, 28 and 29 are rejected under 35 U.S.C. §103(a) as being unpatentable over Takeda in view of Hauser as applied to claims 1, 2, 4, 5, 7, 8, 10, 11, 15-18 and 23-27 above, and further in view of Arslanian (6,345,451).

(i) Claim 9

Claim 9 is directed to a contaminant-purging method for the circulation type liquid helium recondensation device that is employed in a liquid helium recondensation procedure comprising steps of pumping helium gas evaporating from a liquid helium storage tank using a circulating pump, refining the pumped helium gas in a refiner, liquefying the gas in a cooler, storing the liquefied helium in a condensing pot, and transferring the liquid helium from said condensing pot to the liquid helium storage tank for recycling, in which at least either of said condensing pot or said refiner is heated to vaporize the contaminants deposited on the refiner, and the vaporized contaminants are discharged from an inflow side of the refiner to the atmosphere.

Similarly to the arguments with respect to claim 1, 8, and 15, however, the applied art fails to disclose, teach or suggest that “the vaporized contaminants are discharged from an inflow side of the refiner to the atmosphere.”

Therefore, claim 9 is patentable over the applied art. Therefore, withdrawal of the rejection is respectfully requested.

(ii) Claims 3, 6, 9, 12-14, 21, 22, 28 and 29

It is respectfully submitted that since claims 3, 6, 9, 12-14, 21, 22, 28 and 29 depend on respective base claims 1, 8, and 9, they are allowable for at least the reasons that the respective base claims are allowable and they are further allowable by reason of the additional limitations set forth therein. Therefore, withdrawal of the rejection is respectfully requested.

3. Claim 20

Claim 20 is rejected under 35 U.S.C. §103(a) as being unpatentable over Takeda in view of Goddard et al. (5,992,158). The rejection is respectfully traversed.

By the foregoing amendment, claim 20 has been canceled. The rejection is now moot. Therefore, withdrawal of the rejection is respectfully requested.

VI. Newly Added Claim

Claim 30 has been added by the foregoing amendment, to claim various feature of the invention. Since the applied art fails to disclose, teach or suggest “said condensing pot is heated to vaporize the contaminants deposited on the refiner, and the vaporized contaminants are discharged to the atmosphere,” claim 30 is patentable over the applied art. Therefore, allowance of claim 30 is respectfully requested. As to claims 31-33, the applied art fails to disclose, teach or suggest “the refiner and the cooler are provided in a single cold box.” Claim 35 recite a flow control valve and the applied art fails to teach this feature.

Therefore, they are patentable over the applied art. Allowance of these claims is respectfully requested.

VII. Conclusion

In view of the following arguments, all claims are believed to be in condition for allowance over the prior art of record. Therefore, this response is believed to be a complete response to the Office Action. However, Applicant reserves the right to set forth further arguments supporting the patentability of their claims, including the separate patentability of the dependent claims not explicitly addressed herein, in future papers.

Further, for any instances in which the Examiner took Official Notice in the Office Action, Applicant expressly does not acquiesce to the taking of Official Notice, and respectfully request that the Examiner provide an affidavit to support the Official Notice taken in the next Office Action, as required by 37 CFR 1.104(d)(2) and MPEP § 2144.03.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 18-0013, under Order No. NAG-0127 from which the undersigned is authorized to draw.

Dated: January 30, 2009

Respectfully submitted,

By 
Maulin M. Patel

Registration No.: 56,029
Toshikatsu Imaizumi
Registration No.: 61,648
RADER, FISHMAN & GRAUER PLLC
Correspondence Customer Number: 23353
Attorneys for Applicant